

IN THE CLAIMS

1. (Currently Amended) A method of detecting data synchronization comprising:

storing an identified output of code-modulated reproduced data;

counting the number of occurrences of a specified bit pattern in a ~~the~~ bit sequence of the identified output of the reproduced data, in an arbitrary bit period;

identifying codeword partitions of said ~~reproduced data code modulation~~ code-modulated reproduced data based from the results of said count of the number of occurrences of the specified bit pattern; and

outputting said stored identified output in synchronization with said ~~code modulation phase~~, identified codeword partitions ~~in accordance with the specified code modulation phase~~.

2. (Currently Amended) The method of detecting data synchronization according to claim 1, further comprising:

finding the correlation of a front section of the identified output of the axle-modulated reproduced data and a ~~PLO_SYNC phase locked oscillator synchronization pattern that reproduces the clock synchronization of data reproduction;~~ and

specifying a ~~the~~ position of a data portion based on the correlation thus found.

3. (Original) The method of detecting data synchronization according to claim 1, further comprising:

finding the correlation of a rear section of the identified output of said code-modulated reproduced data and a GAP pattern for correctly reproducing the final bit of said reproduced data; and

specifying the position of a data portion based on the correlation thus found.

4. (Original) The method of detecting data synchronization according to claim 1, further comprising:

finding, for a data position detection pattern provided at an intermediate position in the data, the correlation of an intermediate portion of the identified

output of code-modulated reproduced data and a data position detection pattern; and

specifying the position of a data portion based on the correlation thus found.

5. (Original) The method of detecting data synchronization according to claim 1, further comprising selecting reproduced data used for data synchronization detection, or reproduced data used for position detection of a data portion, by means of a data quality signal representing the probability that there is an error in the identified output of the reproduced data.

6. (Canceled).

7. (Currently Amended) A method of recording information comprising ~~the steps of:~~

a step for scrambling data by two or more types of scrambler;

a step for code-modulating the scrambled data;

a step for counting ~~the~~ a number of occurrences of a specified bit pattern in a ~~the~~ bit sequence of ~~the~~ this code-modulated data, in an arbitrary bit period;

a step for determining whether or not the position of a code-modulation codeword partition of the data can be specified by a prescribed threshold value of the ~~count result~~ of ~~the~~ number of occurrences of the specified bit pattern; and

a step for recording data obtained by code-modulation of data scrambled by the scrambler which has been determined to be ~~capable of~~ configured for specifying the position of the code-modulation codeword partition.

8. (Currently Amended) The method of recording information according to claim 7, further comprising a step for recording the information of the scrambler which has been determined to be ~~capable of~~ configured for specifying the position of the code-modulation codeword partition.

9. (Original) A method of reproducing information comprising:

detecting data synchronization using the data
synchronization detection method according to claim 1;
code-demodulating the data in accordance with a
specified code modulation phase;
descrambling the code-demodulated data with two or
more types of descrambler;
detecting error in respect of the descrambled data;
and
outputting as reproduced data the output data of the
descrambler for which the number of detected errors is
smallest.

10. (Original) A method of reproducing information using
the output data of a descrambler as reproduced data,
comprising:

inputting reproduced data including descrambler
information;
detecting data synchronization, using the data
synchronization detection method according to claim 1;
code-demodulating data in accordance with a
specified code-modulation phase;

error-correcting the code-demodulated data; and
descrambling in accordance with scrambling
information included in the error-corrected data.